DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-001035
Date Inspected: 08-Dec-2007

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 830
OSM Departure Time: 1730
Location: Shanghai, China

CWI Name: Lee Chan Wu, Li Zhijiang

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

CWI Present: ☑ Yes ☐ No

Bridge No: 34-0006
Component: Tower Fabrication

Summary of Items Observed:

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Orthotropic Box Girder (OBG) and Tower Mock Up:

Bay 3:

The QA Inspector observed ZPMC welder Mr. Ziu Zihong using welding procedure specification WPS-B-T-2132-1 to make flux cored fillet tack welds on OBG plate 33B weld BP001-01-035 stiffener plate. The QA Inspector observed a welding current of approximately 275 amps, 29 volts with 1.4 mm diameter E71-T1 electrodes and the base material had been preheated to a minimum of 65 degrees C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Sun Tiyu using welding procedure specification WPS-B-T-2132-1 to make flux cored fillet tack welds on OBG plate 34A weld BP001-01-016 stiffener plate. The QA Inspector observed a welding current of approximately 280 amps, 29 volts with 1.4 mm diameter E71-T1 electrodes and the base material had been preheated to a minimum of 65 degrees C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Xan Xiapfeng using welding procedure specification WPS-B-P-2112-FCM to make shielded metal arc fillet tack welds on OBG plate 67A stiffener plates with 4 mm diameter E7018 welding electrodes. The QA Inspector observed a welding current of approximately 190 and the base material had been preheated to a minimum of 65 degrees C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Li Zhijiang is using welding procedure specification WPS-345-SMAW-2G(2F)-Repair to make shielded metal arc weld repairs on OBG SP-7 adjacent to weld SP077-01-019 with 4 mm diameter E7018 welding electrodes. The QA Inspector observed a welding current of approximately 150 and the base material had been preheated to a minimum of 65 degrees C. The reason for this repair is due to an unexperienced person causing a grinding gouge on the base material. Per conversations with ZPMC CWI Li Chan Woo this repair weld is not a critical weld repair due the shallow depth of the grinding gouge. The QA Inspector observed the location of the weld repair is approximately 3 mm in depth and is not considered to be a critical weld repair. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed two ZPMC welders using welding procedure specification WPS-B-T-2132-3 to make flux cored fillet welds on OBG plate 34A stiffener welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates that are being welded. The QA Inspector observed a welding travel speed of approximately 450 mm per minute. As the welding commences, each of the welders is responsible for two of the flux cored welding heads. All welders are using spools of E71T-1 electrodes that have been marked as being installed earlier today. Welder Mr. Li Zhaogian completed weld SP063-01-041 with a welding current of approximately 300 amps and 27.5 volts and weld SP063-01-042 with a welding current of approximately 290 amps and 28.7 volts. Welder Mr. Xin Meng completed weld SP063-01-045 with a welding current of approximately 295 amps and 28.0 volts and weld SP063-01-046 with a welding current of approximately 300 amps and 28.9 volts. Following completion of the welding the QA Inspector observed QPMC QC CWI Inspector Mr. Li Zhijiang performing visual inspection of the completed welds. Mr. Li Zhijiang said he has marked several locations as needing to have weld repairs performed. See the photograph showing the spool of welding electrode which was used to make these welds. Items observed by the QA Inspector appear to comply with project specifications.

Summary of Conversations:

See above for summary of conversations.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer